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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,441	11/28/2003	Takayuki Kondo	117602	7375
25944	7590	05/05/2005		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER STEIN, JAMES D	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,441

Applicant(s)

KONDO, TAKAYUKI



Examiner

James D. Stein

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13 and 14 is/are rejected.
- 7) ☒ Claim(s) 9-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1103.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claims 13 and 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 13 and 14 introduce no further structural limitation to apparatus of claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4-8 and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by [USPUB 2003/0025962] to Nishimura, which discloses a related optical interconnected WDM circuit.

With regard to claims 1, 13, and 14, Fig. 1 of Nishimura shows micro tile integrated multiplexing 106 and demultiplexing 105 chips arranged disposed on a substrate 102. Nishimura teaches the multiplexing micro-tile 106, shown in more detail in fig. 7, to comprise a laser diode array 606, and will therefore having a light-emitting function as claimed by applicant. Demultiplexing micro-tile 105, shown in more detail in

fig. 6, is taught to comprise photo-detector array 507, and will therefore have a light-receiving function. It is noted to applicant that multiplexing devices inherently have wavelength selectivity, as various wavelengths of light are being combined into one signal and separated into individual signals of various wavelengths. As was previously discussed above, claims 13 and 14 do not further limit the subject matter in claim 1 and are therefore rejected on the same basis.

With regard to claims 2, 4, 5 and 6, in addition to the rejection of claim 1 previously discussed above, figs. 6 and 7 show optical waveguides 503 and 609 disposed on the substrate 513/613 and optically connected to the micro-tile shaped elements, considered by the Examiner to be driver circuit elements 510 and 602 (105 and 106 in Fig. 1). Figs. 6 and 7 show a more detailed view of the micro-tile shaped multiplexing devices 106 and 105 (Fig. 1). It is noted to applicant that the micro-tile shaped elements with the light emitting function 106/602 will inherently emit light of various wavelengths as the signal output through waveguide 609 is a multiplexed signal comprising a plurality of wavelengths. In the same manner, the micro-tile shaped elements with the light receiving function 105/510 will inherently have different received wavelengths as the device is a demultiplexer, receiving a multiplexed signal from waveguide 503.

With regard to claim 7, in addition to the rejection of claim 1 previously discussed above, fig. 2 shows integrated logic 108 and memory 110 circuits mounted on a substrate 102. Furthermore, pins 111 function so as to supply power to and provide interconnection between the devices [¶0059].

With regard to claim 8, in addition to the rejection of claim 7 previously discussed above, Nishimura discloses that signal processing, which is carried out by said logic control 108 and memory 110 integrated circuits are flip-chip mounted on the substrate 102 [¶0038-0039].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being obvious over Nishimura as applied to claim 2 above, and further in view of [USPUB 20030128907] to Kikuchi et al. Nishimura discloses the claimed invention except for the waveguide branches to be made of resin (plastic). Kikuchi discloses a method of manufacturing an optical waveguide and optoelectronic wiring boards. Kikuchi teaches that UV-curable resin waveguides are less expensive to manufacture and more reliable under thermal stress than standard optical waveguides [¶0078-0079]. Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify the invention as taught by Nishimura such that the waveguide branches were made of resin in order to provide for improved reliability and a cheaper manufacturing cost.

Allowable Subject Matter

Claims 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the

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base claim and any intervening claims. None of the cited prior art, taken alone or in combination discloses or suggest the optical interconnected device as previously discussed above as a constituent of a flat panel display, and further comprising timing-control integrated circuits and driving integrated circuits mounted on the substrate as the integrated circuit chips, and optical waveguides being disposed so as to connect the timing-control integrated circuits to the driver integrated circuits.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. [USPAT 5,664,032] Bischel et al, which discloses a related optical display panel and [USPAT 6,845,184] to Yoshimura et al, which discloses a related micro-tiled optical interconnection circuit.

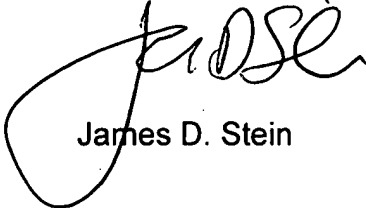
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "JDSE", with a large, sweeping loop on the left side.

James D. Stein

A handwritten signature in black ink, appearing to read "Sung Pak", with a horizontal line extending to the right.

Sung Pak
Patent Examiner
AU 2874